

REMARKS

In response to the April 20, 2006 Office Action, Applicants respond to the Examiner's detailed action with the following remarks numbered according to the Examiner's communication.

1-4. Applicants acknowledge Examiner's acceptance of the figures received by the Examiner on May 26, 2005, and the removal of the finality of the rejection based on Applicants' submission of a request for continued examination and payment of the fee. Claims 14, 20-21, and 23-26 are currently pending. Claims 14, 21, and 23-24 are rejected under §103(a), and claims 20, 25, and 26 contain allowable subject matter but are objected to for depending on rejected claims. Applicants have amended claim 14 to add the element of a drift region in the semiconductor device and limitation of the trenches terminating in the drift region; the amendment does not add new matter and therefore raises no new issues.

5. Responsive to Examiner's rejection of Claims 14, 21, and 23-24 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,881,105 (Davari et al.) in view of U.S. Patent No. 4,767,722 (Blanchard), Applicants respectfully disagree with Examiner's rejection. To establish *prima facie* obviousness of a claimed invention, all the claim elements and limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 U.S.P.Q. 580 (CCPA 1974).

Claims 21, 23, and 24 depend from Claim 14, and thereby Claims 21, 23, and 24 incorporate each and every element and limitation of the claim from which they depend. Applicants have amended Claim 14 to add: (1) an element of a drift region lightly doped with said one polarity, and (2) a limitation that the trenches terminate in the drift region. No new matter is added with this amendment.

The device taught by Davari et al. is a complimentary metal-oxide-semiconductor ("CMOS") device (Col. 1, lines 6-11), which are low power devices dealing with low voltages and generally used as switching devices. CMOS devices do not have the same structures or problems as power devices, which is type of device claimed by Applicants.

Particularly, Davari et al. does not have a drift region, which is now expressly claimed in claim 14. The drift region of the claimed device is necessary to prevent breakdown voltage of power devices, since power devices are used with high voltages. Switching devices are used with low voltages and do not have problems related to breakdown voltage. Furthermore, claim 14 adds the limitation that the trenches terminate in the drift region. In contrast, Davari et al. teaches a device that terminates in the source regions 18 and 16, as shown in Fig. 1.

Further, the claimed power semiconductor reduces RDSON, which is not a problem that occurs in CMOS devices because they are used with low voltages. The claimed device reduces RDSON by providing a highly conductive layer of silicide. Since Davari et al. teaches the use of a CMOS device, the reference should not be applied as a reference to this device because (1) the does not have the same structure, i.e. a drift region and trenches terminating in the drift region, and (2) the reference does not have the same function as the claimed invention, i.e. the reference is a switching device and the claimed invention is a power device. Applicants argue that Davari et al. does not teach all of the claimed elements and limitations of claim 14, nor does it suggest the claimed device because the reference relates to a CMOS device and not a power semiconductor. Therefore, the reference does not teach or suggest the elements and limitations of claim 14 or any of its dependent claims.

Examiner also cites Blanchard for teaching the use of a single drain region on the other surface of the substrate. Blanchard, however, cannot be combined with Davari et al. for the aforementioned reasons. Davari et al. teaches a CMOS device and Blanchard teaches DMOS power transistor. CMOS devices and power transistors are not the same devices, and therefore it would not be obvious to one skilled in the art to use the single drain region in Blanchard and combine it with a CMOS device as taught by Davari et al. Further, Blanchard does not show or suggest the elements of claim 14, and therefore cannot render the claim unpatentable.

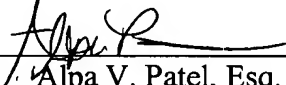
In sum, the art of record whether viewed singly or in combination does not render obvious the invention as now claimed.

6-7. Applicants acknowledge the allowable subject matter of claims 20, 25, and 26, but believe that all the pending claims are now in condition for allowance. Applicants respectfully request favorable consideration and that a timely Notice of Allowance be issued in this case.

8. Applicants appreciate the opportunity to call the Examiner but believe that this amendment to the claims and the forgoing remarks fully address the issues raised by the Examiner. On the other hand, the Examiner is invited to call the undersigned attorney if he has any matters to address that will facilitate allowance of the application.

In the event that Applicant has overlooked the need for an extension of time, additional extension of time, payment of fee, or additional payment of fee, Applicants hereby conditionally petition therefore and authorize that any changes be made to Deposit Account No.: 50-3010.

Respectfully submitted,
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